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Analysis of the Role of Capital Employed Efficiency, Human Capital Efficiency, Structural Capital Efficiency in Banking Companies in Indonesia

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ABSTRACT

The rapid development of science and technology is shifting the business concept that was previously only based on physical and financial assets to a knowledge-based business. Based on the research problem, this research aims to describe capital employed efficiency, human capital efficiency, and structural capital efficiency in banking companies in Indonesia. This research method is a descriptive study that examines the components of capital employed efficiency, human capital efficiency, and structural capital efficiency. The criteria for this research sample follow Firer and Williams, the company does not have a negative HC or SC value. This research was conducted at the Indonesia Stock Exchange (IDX). The study's results found that based on the calculation results of 24 banking companies studied during 2014-2022, 62.5% (15 companies) had capital-employed efficiency achievements below average, while 37.5% (9 companies) were above average. For human capital efficiency achievements, 70.8% (17 companies) were below average, while 29.2% (7 companies) were above it. PT Bank Y is included in the group with human capital efficiency below the average of the banks studied. The study results are expected to be theoretically useful in presenting empirical evidence regarding the influence of capital employed efficiency, human capital efficiency, structural capital efficiency, relational capital efficiency, innovation capital efficiency, and corporate governance on financial performance in banking companies in Indonesia.

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KEYWORDS: Capital Employed Efficiency, Human Capital Efficiency, Structural Capital Efficiency

1. INTRODUCTION

The rapid development of science and technology is shifting the business concept that was previously only based on physical and financial assets to a knowledge-based business. Running a business in the era of knowledge-based business requires companies to continue to innovate, especially in developing science and technology in the company. This is because mastery of technology is an important factor in increasing the competitiveness of companies in the modern business era. This aligns with Stewart's view (1997) that science is the main ingredient for producing, doing, buying, and selling. Therefore, the management of company resources based on knowledge and technology needs special attention to be utilized optimally to improve its performance and competitiveness.

In addition to mastering science and technology, companies must optimize the use of all available resources to increase the company's competitiveness. The resources in question are not limited to physical and financial resources but include all non-physical (intangible) resources. In today's knowledge-based economy, a company's productivity and competitive advantage are no longer based on physical and financial assets but on intangible assets (Oppong & Pattanayak, 2019). In addition, knowledge worldwide has changed innovation and creativity in companies, especially in company value from tangible to intangible assets (Buallay et al., 2020). Thus, the management of non-physical (intangible) resources is one of the important keys to improving company performance in today's modern business era.

Intangible resources are seen as increasing the value creation process for companies to increase the company's competitive advantage. One of the intangible resources that companies can maximize to increase their competitive advantage is intellectual capital (IC). Intellectual capital is considered a wealth generator and driver of financial performance, thereby creating competitive advantage and sustainability in business (Xu & Wang, 2018). This is in line with what Poh et al. (2018) expressed: that the creation of business value is carried out by physical assets and prioritized

in terms of how successful management is in managing intellectual capital.

To ensure the role of intellectual capital, various studies have been conducted to test the influence of intellectual capital on company performance in the non-financial and financial sectors. One of the most common indicators used in research to measure a company's intellectual capital is the value-added intellectual coefficient (VAIC) pioneered by Pulic (2000). This is the most common method used in measuring intellectual capital using company financial data.

Several studies have been conducted on non-financial sector companies using the VAIC method. The findings of Hamdan's (2018) research support the relationship between intellectual capital and accounting-based company performance. Research by Sardo et al. (2018) shows that human, structural, and relational capital positively impact hotel financial performance. Other research findings conducted by Xu & Wang (2018) revealed that physical capital, human capital (HC), and relational capital (RC) have a positive impact on company performance. Innovative capital harms company performance, and this finding contradicts the findings of Bayraktaroglu et al. (2019), which show that innovative capital efficiency directly impacts company productivity. Based on this study's findings, intellectual capital in aggregate and per component affects the achievement of company financial performance in the non-financial sector.

In addition to the non-financial sector, various studies have also been conducted on the influence of intellectual capital on the company's financial performance in the financial sector, especially the banking sector. This is because the banking sector is one of the business sectors that is very knowledge and technology-intensive. The banking sector is experiencing very rapid changes along with changes in technology, this is because banks must continue to innovate, especially in providing financial services to customers by utilizing developments in science and technology.

Research conducted by Ozkan et al. (2017) revealed that capital employed efficiency (CEE) and human capital efficiency (HCE) have a positive effect on financial performance, while structural capital efficiency (SCE) has no significant effect. The findings of this study differ from Poh et al. (2018), who showed that all components of Intellectual capital efficiency (capital employed efficiency, human capital efficiency, structural capital efficiency) have a significant relationship to financial performance indicators in terms of return on assets (ROA), return on equity (ROE) and leverage (LEV). Different findings were also expressed by Oppong & Pattanayak (2019), namely that HCE and SCE have a greater influence on the productivity of commercial banks. There are other findings made by Buallay (2019), namely that human capital efficiency (HCE), capital employed efficiency (CEE), and structural capital efficiency (SCE) affect the operational performance and financial performance of conventional banks. In addition, Buallay et al. (2020) found a positive relationship between intellectual capital efficiency and financial performance and market performance.

This research aims to describe capital employed efficiency, human capital efficiency, and structural capital efficiency in banking companies in Indonesia. The results of this study are expected to contribute practically, in the form of useful information for banking management in Indonesia as a consideration in managing resources, especially intangible resources, to improve the company's competitiveness amidst tight competition. Theoretical benefits are presented by empirical evidence regarding the influence of capital employed efficiency, human capital, structural capital, relational capital, innovation capital, and corporate governance on the financial performance of banking companies in Indonesia. In addition, it is also useful in the policy field as input for policymakers in intellectual capital disclosure standards in strategic decision-making.

2. LITERATURE REVIEW

Three theories are used as the basis for answering the problems in this study. These three theories are considered capable of explaining the role of corporate governance in mediating the relationship between capital employed efficiency, human capital efficiency, structural capital efficiency, relational capital efficiency, and innovation capital efficiency on financial performance. Resource-based view, stakeholder theory, and agency theory are the theories that are the basis of this study.

The view of the company as a collection of productive resources was pioneered by Penrose (1959). According to Penrose (2009), companies in an industry are more differentiated by their relationship to using productive resources to produce and sell goods and services. So, the company is more than just an administrative unit, but also a collection of productive resources and their use varies from time to time as determined by administrative decisions.

According to Barney (1991), company resources are divided into three main groups. First, physical capital resources (Williamson, 1975) include the physical technology used, the company's plant and equipment, geographic location, and access to raw materials. Second, human capital resources (Becker, 1964) include training, experience, judgment, intelligence, relationships, and individual insights from the company's management and workers. Third, organizational capital resources (Tomer, 1987) consist of formal reporting structures, planning systems (both formal and informal), control and coordination systems, and informal relationships between groups within the company.

All resources owned by the company can be a source of sustainable competitive advantage when the resources are valuable (Barney, 1991). According to Barney (1991), Resources are said to be valuable when they allow the company to understand or implement strategies that increase its efficiency and effectiveness. Companies can gain a competitive advantage by implementing product market strategies and exploiting resources that are already under their control (Barney & Clark, 2007). This shows that not all company resources are strategic and can be used anytime. The company's ability to explore and manage its resources through various strategic policies is important in utilizing company resources. If company resources are managed and utilized properly, it will improve company performance.

Resource-based view theory emphasizes the optimal utilization of company resources, both physical and human and organizational capital, to improve company performance. The company resources referred to in this study are capital employed, human capital, structural capital, relational capital, and innovation capital. Good management support is required to determine various company strategies for managing resources well. Thus, in managing company resources, it needs to be supported by good corporate governance.

Measurement of each component of intellectual capital efficiency using the VAIC method begins with calculating the value added (VA). After determining the value added, the next step is calculating the efficiency of each component of intellectual capital consisting of capital employed efficiency (CEE), human capital efficiency (HCE), structural capital efficiency (SCE), relational capital efficiency (RCE), and innovation capital efficiency (ICE).

Value-added results from current business and expresses newly created wealth from a certain period (Pulic, 2000). Value added is the difference between output (OUT) and input (IN), where OUT is the income from all products and services sold in the market, while IN is all expenses used in obtaining the income (Pulic, 2000). Employee expenses (labor expenses) are not calculated as a component of IN because they play a role in value creation (Pulic, 2000). In addition, expenses for research and development (R&D) and advertising are reduced when calculating the added value (Chen et al., 2005).

Calculating capital employed efficiency or value added capital employed is to obtain information about how efficiently the value added has been generated from physical and financial capital. This is because the company's value added is generated from physical, financial, and intellectual capital. The coefficient of capital employed efficiency shows the ability of each unit of capital (both physical and financial) invested by the company to create new value (Pulic, 2000). Capital employed efficiency is calculated by dividing the value added by capital employed.

Organizations with a value-creation view tend to focus their management energy on the firm's human capital, including how it is organized, how it is directed, how knowledge is created, and how it delivers value to the firm (Edvinsson & Sullivan, 1996). Human capital considerations also highlight training and human resource management policies. A large investment in employee training or development makes good business sense if the firm can minimize employee turnover. It is highly recommended (Roos et al., 1997).

Human capital is a human factor in an organization that combines intelligence, skills, and expertise, giving a unique organizational character. The human element of an organization is those who can learn, change, innovate, and provide creative encouragement that, if properly motivated, can ensure the organization's long-term survival (Bontis, 1999; Bontis et al., 1999). Human capital is also a source of creative ideas, innovations, and insights related to knowledge. Ideas are free, abundant resources, even infinite, and come from human capital (Stewart, 1997).

Given that the VAIC method is based on the position of the balance sheet, in determining the value of human capital efficiency, employee salary costs are considered equivalent to human capital (Pulic, 2000). The calculation of human capital efficiency begins with employee salaries and wages, which are not included as input (Bontis et al., 2015). Human capital efficiency is calculated by dividing the value added by human capital.

Structural capital comes from organizational relationships and values, which reflect the external and internal focus of the company, plus the value of renewal and development (Roos et al., 1997). Structural capital is an infrastructure a company develops to commercialize its human capital, including direct and indirect support (Edvinsson & Sullivan, 1996). In other words, structural capital is an infrastructure the company provides to support human resources in their duties. Structural capital provides an environment that encourages human resources to create and utilize their knowledge, in other words, structural capital is the part of the company that remains when human resources are absent (Edvinsson & Sullivan, 1996).

Structural capital is an important link that allows intellectual capital to be measured at the organizational level because, without structural capital, intellectual capital will only be human capital (Bontis, 1999). Thus, structural capital is important in measuring intellectual capital, so it needs to get attention in the company. An organization with strong structural capital will have a supportive culture that allows individuals to try something, fail, learn, and try again (Bontis, 1999). The core of structural capital is the knowledge embedded in organizational routines (Bontis et al., 1999).

Using the VAIC approach, structural capital is a value-added minus human capital. Therefore, human capital and

structural capital are in opposite proportions. The less human capital participates in value-added, the more structural capital is involved (Pulic, 2000). Structural capital Efficiency is calculated by dividing the value added by structural capital.

CONCEPTUAL FRAMEWORK

Resource-based view theory emphasizes that a company is a collection of productive resources that, if managed well, will increase the company's competitive advantage and performance. Company resource management is not only limited to financial capital (physical and monetary capital) but also includes intellectual capital management. Intellectual capital is important in company management in today's modern business era.

Various studies have been conducted to test how the role of intellectual capital in improving company performance and the role of each component of intellectual capital on company performance. This study tested the influence of intellectual capital components, including capital employed efficiency, human capital efficiency, structural capital efficiency, relational capital efficiency, and innovation capital efficiency, on company performance.

Capital employed efficiency is one of the components of intellectual capital that impacts improving company performance. This is supported by several research findings, one of which is Hamdan (2018) which shows that capital employed efficiency positively impacts the ROA of Saudi and Bahraini companies with a significant influence on Saudi companies. Thus, if the company can process or produce added value from the resources in the capital employed, it will improve its financial performance.

3. RESEARCH METHODS

3.1 Research Design

This descriptive research aims to see the influence of the components of Capital Employed Efficiency, Human Capital Efficiency, and Structural Capital Efficiency.

3.2 Research Location

This research was conducted at the Indonesia Stock Exchange (IDX). The reason for choosing this location is that it is considered more appropriate for obtaining company financial information, especially in several years, because companies routinely publish their financial reports on the IDX.

3.3 Research Sample

The sample is a portion or representative of the population studied. Sampling in this study was carried out using the purposive sampling method, which is based on certain criteria. The sample criteria for this study are based on several references, namely following the research of Firer and Williams (2003), Shiu (2006), and Zéghal and Maaloul (2010), where the sample only includes companies that do not have negative human capital (HC) or structural capital (SC) values. In addition, companies listed on the Indonesia Stock Exchange before 2014 were also used.

3.5 Data Collection Procedures

Data collection procedures are one of the important stages that must be considered in research to ensure that the data collected is valid and can be used to conclude from the research results. The data in this study were collected by documenting all financial reports and annual reports of banking companies selected as samples in this study, which were published on the Indonesia Stock Exchange.

4. RESULTS AND DISCUSSION

4.1 Research Results

To provide an overview of the data distribution of each research variable, it is necessary to conduct a descriptive statistical analysis. Descriptive statistical analysis can provide an overview of the range of research data distribution (minimum and maximum), the center of research data distribution (average), and the spread or variation of research data (standard deviation). The results of the descriptive statistical analysis of each research variable are presented in the following explanation.

The descriptive statistical analysis results of capital employed efficiency from 24 banking companies from 2014 to 2022 show the lowest (minimum) value of -0.063 and the highest (maximum) value of 0.070. The company with the lowest capital-employed efficiency achievement was PT Bank MNC Internasional Tbk in 2017, while the company with the highest capital-employed efficiency achievement was PT Bank BTPN Tbk in 2014. The data distribution center or average value is 0.032, with a standard deviation or distance between individual points and the center point of 0.015. The standard deviation value, which is smaller than the average value, indicates that the research data presented for the capital employed efficiency variable has low or homogeneous variation

the descriptive statistical analysis of human capital efficiency results from 24 banking companies from 2014 to 2022 showed the lowest (minimum) value of -3.11 and the highest (maximum) value of 8.73. The company with the lowest human capital efficiency achievement was PT Bank MNC Internasional Tbk in 2017, while the company with the highest human capital efficiency achievement was PT Bank Woori Saudara Indonesia 1906 Tbk in 2014. The data distribution center or the average value was 2.25, with a standard deviation or distance between individual points to the center point of 1.03. The standard deviation value, smaller than the average value, indicates that the research data presented for the human capital efficiency variable has low or homogeneous variation.

The results of the descriptive statistical analysis of structural capital efficiency from 24 banking companies from

2014 to 2022 show the lowest (minimum) value of -8.50 and the highest (maximum) value of 8.38. The company with the lowest structural capital efficiency achievement was PT Bank Artha Graha Internasional Tbk in 2019, while the company with the highest structural capital efficiency achievement was PT Bank Ganesha Tbk in 2014. The data distribution center or average value is 2.20, with a standard deviation or distance between individual points to the center point of 1.38. The standard deviation value, smaller than the average value, indicates that the research data presented for the structural capital efficiency variable has low or homogeneous variation.

4.2 Discussion of Research Results

Capital employed efficiency provides an overview of how efficiently the value added has been generated from physical and financial capital. Descriptive statistical analysis results provide an overview of the average capital employed efficiency of the banking companies studied during 2014-2022, which was 0.032.

Based on the calculation results presented in the 24 banking companies studied, it is known that there are 15 companies or 62.5% that have capital employed efficiency achievements below the average of the banking companies studied during the 2014-2022 period. Meanwhile, the other 9 companies, or 37.5%, have capital-employed efficiency achievements above the average of the banking companies studied. Banking companies with capital-employed efficiency achievements below the average of the banks studied.

Banking companies with capital-employed efficiency achievements below the average of the banks studied indicate that these companies have lower capabilities in utilizing fixed assets and financial assets owned to generate value added for the company than other banking companies. This condition occurs because of the company's low ability to generate income by utilizing assets owned, especially financial assets. In addition, high operational costs also impact the low value-added generated by the company.

The lowest average capital employed efficiency achievement is PT Bank X Internasional Tbk. This condition occurs because 2014 - 2022, PT Bank MNC Internasional Tbk experienced an increasing trend in assets yearly. However, operating profit and value-added fluctuated from year to year, even tending to decline.

Human capital efficiency provides an overview of how efficiently the value added has been generated from the company's human capital. The descriptive statistical analysis results show that the average human capital efficiency of the banking companies studied during 2014-2022 was 2.25.

Based on the calculation results presented in Appendix 3, from 24 banking companies studied, it is known that there are 17 companies or 70.8% that have human capital efficiency achievements below the average of the banking companies studied during the 2014-2022 period. While the other 7 companies or 29.2% have human capital efficiency achievements above the average of the banking companies studied. The banking companies with human capital efficiency achievements below the average of the banks studied are PT Bank Y.

Banking companies with human capital efficiency achievements below the average of the banks studied indicate that they have lower capabilities in managing their human capital to increase value added for the company compared to other banking companies. This condition can occur because the company cannot optimally manage employees' knowledge, experience, skills, and expertise to increase the value added to the company.

The lowest average capital employed efficiency achievement is PT Bank X Internasional Tbk. This condition occurs because, from 2014 to 2022, PT Bank MNC Internasional Tbk experienced an increasing trend in the costs incurred for labor every year. However, operating profit and value-added fluctuated from year to year, even tending to decline.

Structural capital efficiency illustrates how efficiently the company utilizes the infrastructure provided to generate added value for the company. The descriptive statistical analysis results provide an overview that the average structural capital efficiency of the banking companies studied during the 2014-2022 period was 2.20.

Based on the calculation results presented in Appendix 3 of the 24 banking companies studied, it is known that there are 15 companies or 62.5% that have structural capital efficiency achievements below the average of the banking companies studied during the 2014-2022 period. While the other 9 companies, or 37.5%, have structural capital efficiency achievements above the average of the banking companies studied.

Banking companies that have structural capital efficiency achievements below the average of the banks studied are PT Bank X. Banking companies that have structural capital efficiency achievements below the average of the banks studied indicate that these companies have lower capabilities in managing the company's infrastructure to generate value added for the company when compared to other banking companies. The company with the lowest average achievement of structural employed efficiency is PT Bank Y Tbk.

5. CONCLUSION AND SUGGESTIONS

Several conclusions can be drawn based on the results of the research and discussion that have been described regarding capital employed efficiency, human capital efficiency, and structural capital efficiency in banking companies in Indonesia. Based on the calculation results presented in the 24 banking companies studied, it is known that there are 15 companies or 62.5% that have capital

employed efficiency achievements below the average of the banking companies studied during the 2014-2022 period. Meanwhile, the other 9 companies, or 37.5%, have capital-employed efficiency achievements above the average of the banking companies studied.

Based on the calculation results presented in the 24 banking companies studied, it is known that there are 17 companies or 70.8% that have human capital efficiency achievements below the average of the banking companies studied during the 2014-2022 period. While the other 7 companies or 29.2% have human capital efficiency achievements above the average of the banking companies studied. The banking companies with human capital efficiency achievements below the average of the banks studied are PT Bank Y.

Meanwhile, structural capital efficiency provides an overview of how efficiently the company utilizes the infrastructure provided to generate added value for the company. The descriptive statistical analysis results provide an overview that the average structural capital efficiency of the banking companies studied during the 2014-2022 period was 2.20.

Based on the study's conclusion, the management of banking companies in Indonesia pays more attention to the development and management of resources, especially in terms of physical assets, finance, and human resources. Although technological developments are very rapid, the results of this study indicate that the contribution of value added generated by capital employed and human capital has a significant role in improving the performance of banking companies in Indonesia.

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